Prince Edward Island
CANADA

Agriculture Research
Investment Fund Inc.

Annual Report 2001~2002

Established by the
Prince Edward Island
Department of Agriculture and Forestry

103-03343/

Hon. Mitchell Murphy, Minister
P.E.I. Department of Agriculture and Forestry

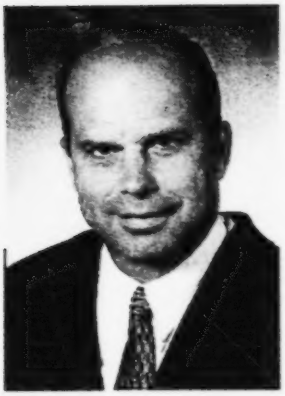
To the Honourable Leonce Bernard
Lieutenant Governor of Prince Edward Island

Sir:

I have the honour to submit herewith the 2001 Annual Report of the Prince Edward Island Agricultural Research Investment Fund Inc.

I have the honour to be, Sir
Your obedient servant,

Hon. Mitch Murphy, Minister
Agriculture and Forestry



Dr. Robert Morrison, Chairperson
Agricultural Research Investment Fund Inc.

The Honourable Mitch Murphy
Minister of Agriculture and Forestry
P.O. Box 2000
Charlottetown, P.E.I., C1A 7N8

Honourable Sir:

In accordance with the Prince Edward Island Agricultural Research Investment Fund Inc. Bylaws, I enclose the report of the Corporation for the fiscal year ended March 31, 2002.

This report also includes the Corporation's audited financial statements for this period.

Respectively submitted,

Dr. Robert Morrison, Chairperson
Agricultural Research Investment Fund Inc.

BOARD OF DIRECTORS

Alan Miller/Dr. Robert Morrison ..... Chairperson

Tim Ogilvie.....Vice-Chairperson

Joanne Driscoll.....Treasurer

Dannie MacKinnon.....Member

Paul Jelley/John MacQuarrie.....Member

Christiane Deslauriers.....Member

Gary Linkletter.....Member

ADMINISTRATION

Juanita Diamond.....Program Officer

Barb Poirier.....Recording Secretary

CHAIRMAN'S REPORT

I am pleased to submit the annual report highlighting the activities of the Prince Edward Island Agricultural Research Investment Fund Inc. for the 2001-2002 fiscal year.

The objectives of ARIF Inc. are to stimulate the planning and undertaking of short-term (normally 3 years or less) research by the private sector that has specific application to Prince Edward Island agriculture, to support research that has the potential to yield commercial and/or economic or environmental benefits to the agriculture industry (or an identifiable sector within agriculture), and to encourage the communication of research activities and results.

The Corporation was managed by a seven-member Board of Directors representing government, research agencies and industry. The Board met a total of seven times during the 2001-2002 fiscal year.

There was continued interest and activity in the Fund. During the past year, eight proposals were reviewed by the Board. The majority of projects were from industry associations and organizations, with some having collaboration with educational institutions and multiple funding partners. The six proposals approved were for an ARIF commitment of $510,765.

Project subject areas were diverse and included studies relating to potato viruses, cattle health assurance, selection of red clover varieties related to nematode resistance, improving the potential of blueberry production, and monitoring levels of faecal coliform bacteria in streams.

The guidelines for the Agricultural Research Investment Fund Inc. were amended during the past year and changes have been made to the funding levels, eligible applicants, establishment of the assistance for pilot projects, and a requirement on the registration of projects on the Inventory of Canadian Agri-Food Research (ICAR) website.

The Corporation's 2001/2002 fiscal expenditure for approved projects was $368,433.

APPROVED PROJECTS 2001/2002

Concentration of Faecal Coliform Bacteria in Prince Edward Island Headwater Streams

Applicant:	Southeast Environmental Association
Project Term:	1 year
Project Cost:	$50,200
Maximum ARIF Contribution:	$14,000

Degradation of water quality can occur in many forms including sedimentation, and the input of nutrients, pesticides and faecal coliform (FC) bacteria. Faecal coliforms are a group of bacteria that occur in the intestines of all warm-blooded animals.

This research project will monitor remediated sites (where livestock have been removed from streams) in order to create a larger database of post-remediation data, create a larger set of wet day data, and monitor a watershed by taking samples up and downstream of potential non-point source pollution areas. Data collected will be site-specific but valuable as situational observations and benchmarking of current bacterial loads at those sites.

Value-added uses of blueberries for hog semen preservation and human food development

Applicant:	Prince Edward Island Blueberry Growers Association University of Prince Edward Island (AVC) Eastern Swine Club
Project Term:	3 years
Project Cost:	$271,200
Maximum ARIF Contribution:	$167,200

Various fruit and vegetables are known to contain antioxidants that are beneficial to health when included in the diet. Blueberries are an important source of antioxidant phytonutrients. At the cellular level, antioxidants protect cell membranes by preventing lipid peroxidation, a property that may make the product valuable as a cell preservative additive to sperm cells. Cells in boar semen do not tolerate moderate temperatures and end up undergoing lipid peroxidation.

The objectives of this research project are to increase markets for blueberry plants and products by 1) extraction of the bioactive fractions and testing of the properties and effectiveness of blueberries to maintain the viability of stored cells using boar semen as a model and 2) development of novel food products from the portion of the berries not used for extracts for enhanced value.

Resistance of Red Clover Varieties to Invasion of Root-Lesion Nematodes

Applicant:	P.E.I. Milk Marketing Board P.E.I. Potato Producers Association East Coast Commodities Inc.
Project Term:	2 years
Project Cost:	$32,020
Maximum ARIF Contribution:	$18,300

Red clover is a widely adapted and productive forage legume species in Prince Edward Island. Its main limitation is the fact that all known varieties are short lived. The poor persistence was attributed to three main factors: the nature of the species, poor winter hardiness, and or its susceptibility to numerous root and crown diseases. Red clover was shown to be very susceptible to root lesion nematodes invasion, and therefore, this may play a major role in reducing long-term persistence.

The identification of red clover varieties resistant to root-lesion nematodes will facilitate in using this species in rotations containing crops such as potatoes, carrots, strawberry and vegetable crops, which are highly susceptible to this pest. Crop rotation has been identified as the most economical and sustainable strategy for reducing the root-lesion nematodes in potatoes, carrots, strawberry and vegetable crops. Identifying red clover varieties and cultivars which help suppress nematode populations will make a breakthrough in enhancing the profitability of many crops in Prince Edward Island as well as provide an environmentally friendly solution to overcome the impact of this pest.

The main objective of this study is to evaluate currently recommended and new red clover varieties for resistance to root-lesion nematodes in the greenhouse and under field conditions.

Development of a PEI Dairy Cattle Health Assurance Program

Applicant:	PEI Dairy Producers Association University of Prince Edward Island (UPEI)
Project Term:	3 years
Project Cost:	$[illegible]
Maximum ARIP Contribution:	$ [illegible]

There is very limited information on the prevalence of infectious dairy diseases in PEI and across Canada and insufficient knowledge about the specific biosecurity measures required to prevent the introduction of diseases into dairy herds or control their spread within herds. Four infectious diseases, namely neosporosis, Johne's Disease (JD), enzootic bovinosis (EBL), and bovine viral diarrhea (BVD) are thought to have large health and economic impacts related to lost international market opportunities, lower domestic productivity and/or reduced consumer demand.

This project will lead to the determination of specific dairy cattle health status and management advantages. Under the context of the linkage to the Canadian National Cattle Health Assurance Program, this project will utilize up-to-date prevalence data, costs of infection, and disease and risk factor assessments.

Potato Viruses in PEI: insect vectors and the role of virus translocation to tubers

Applicant:	PEI Department of Agriculture and Forestry
Project Term:	3 years
Project Cost:	$[illegible]
Maximum ARIP Contribution:	$[illegible]

In recent years, potato growers have had increasing problems ensuring the continuity of supply of low virus seed lots. Viruses which have become of major concern to growers include potato virus Y^ (PVY^) and potato leafroll virus (PLRV). Correct diagnosis of virus diseases in the field is essential if new disease reduction strategies are to be developed. The use of a laboratory based test over the past two years has greatly improved the accurate detection of plant viruses. However, effective virus management also requires an understanding of epidemiology, and the relationship of potato cultivars and specific cultural practices to disease development.

This proposal will address the associated problems of potato virus spread, tuber infection and movement of the virus through the plant. Studies will include: 1) a determination of the ability of various aphid and associated insect species to transmit different potato viruses, 2) validating the triggers for the aphid flows currently linked to the Aphid Alert Warning Program, and 3) an examination of the relationship between late season infection, killdown and the rate of translocation and partitioning of virus into developing tubers.

Enhancing the Yield Potential of Wild Blueberries

Applicant:	Wild Blueberry Growers Association Nova Scotia Agricultural College Wild Blueberry Producers Association of Nova Scotia
Project Term:	3 years
Project Cost:	$70,000
Maximum ARIF Contribution:	$40,220

The horticultural production of lowbush blueberries is an important commodity in Northeastern Atlantic Canada. Farm gate values (2000) in Prince Edward Island were approximately $5 million, with more production planned for future years as fields continue to be developed for production.

The long term goal of this research project are to develop improved cultural management practices that will enhance the overall growth and development of lowbush blueberries with an emphasis on increased floral bud winter and frost hardiness. To attain this objective, studies will focus on 1) determining the carbohydrate dynamics and bulking characteristics and the influences of late summer applications of foliar applied nutrients and granular fertilizers, 2) evaluating the influence of foliar applied nutrients and granular fertilizers on the winter hardiness of floral buds, and 3) examining the influence of foliar applied anti-desiccants on the winter hardiness of the lowbush blueberry.

The proposed research will provide growers with an improved understanding of the seasonal tolerance of wild blueberries to limiting temperatures. Consequently, producers will be able to more effectively manage blueberry fields prior to the arrival onset of the growing season and will result in improved berry quality and yield.

COMPLETED PROJECTS

The following projects were completed during the year under review:

- *Wild Fruit Harvest Laboratory Test to Yield Enhancing Pill Private Board*
- *Seed Production of Grasses in Grassland Seed Growers Association*
- *Fruit Harvest Time Testing Pill Private Board/Pill Private Quality Assurance*
- *Proposal to Improve Grain Research & Prince Edward Island Pill Big Commodity Marketing Board*

The following project was terminated:

- *Investment Greenhouse Production of Selected Perennial Medicinal Plants Pill Medicinal Plant Association*

The following project was withdrawn:

- *Private Timber Pill Seed Farms and Co of Lots Demonstrations and Pill Department of Agriculture and Forestry*

In summary, I wish to thank the Board of Directors for their continued commitment to the Corporation and their efforts towards advancing agricultural research.

Respectfully submitted,

Dr. Robert Morrison, Chairperson
Agricultural Research Investment Fund Inc.

AUDITOR GENERAL

CHARLOTTETOWN

PRINCE EDWARD ISLAND

PEI AGRICULTURAL RESEARCH INVESTMENT FUND INC.

FINANCIAL STATEMENTS

MARCH 31, 2002

AUDITOR GENERAL

CHARLOTTETOWN
PRINCE EDWARD ISLAND

AUDITOR'S REPORT

To the Board of Directors of the
PEI Agricultural Research Investment Fund Inc.

I have audited the balance sheet of the PEI Agricultural Research Investment Fund Inc. as at March 31, 2002 and the statement of revenue, expenditures and surplus, and cash flows for the year then ended. These financial statements are the responsibility of the corporation's management. My responsibility is to express an opinion on these financial statements based on my audit.

I conducted my audit in accordance with Canadian generally accepted auditing standards. Those standards require that I plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In my opinion, these financial statements present fairly, in all material respects, the financial position of the corporation as at March 31, 2002 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.

J. Wayne Murphy, FCA
Auditor General

Charlottetown, Prince Edward Island
May 29, 2002

PEI AGRICULTURAL RESEARCH INVESTMENT FUND INC.

BALANCE SHEET

AS AT MARCH 31, 2002

	2002	2001
ASSETS		
Cash	$ 931,593	$ 53,243
Provincial Deposit Receipt - at cost	-	758,936
Accounts Receivable		
- Province of Prince Edward Island	400,000	600,000
- General	119,661	828
	$1,451,254	$1,413,007
LIABILITY AND SHAREHOLDER'S EQUITY		
Accrued Liability	$ 217,127	$ 252,126
Share Capital - Note 3	100	100
Surplus - Statement 2	1,234,027	1,160,781
	$1,451,254	$1,413,007

(The accompanying notes are an integral part of these financial statements.)

SIGNED ON BEHALF OF THE BOARD:

PEI AGRICULTURAL RESEARCH INVESTMENT FUND INC.

STATEMENT OF REVENUE, EXPENDITURES AND SURPLUS

FOR THE YEAR ENDED MARCH 31, 2002

	2002	2001
Revenue		
Provincial Grant	$ 400,000	$ 600,000
Interest Revenue	41,679	49,732
	441,679	649,732
Expenditures		
Administration	3,389	1,601
Research Projects	365,044	642,410
	368,433	644,011
Net Income for the Year	73,246	5,721
Surplus, Beginning of Year	1,160,781	1,155,060
Surplus, End of Year	$1,234,027	$1,160,781

(The accompanying notes are an integral part of these financial statements.)

PEI AGRICULTURAL RESEARCH INVESTMENT FUND INC.

STATEMENT OF CASH FLOWS

FOR THE YEAR ENDED MARCH 31, 2002

	2002	2001
CASH FLOW FROM OPERATING ACTIVITIES		
Receipts from Province	$600,000	$ 200,000
Payments to Projects	(518,977)	(515,246)
Payments for Administration Expenses	(3,389)	(1,601)
Interest Received	41,780	49,753
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	119,414	(267,094)
CASH AND CASH EQUIVALENTS - Note 5		
Balance, Beginning of Year	812,179	1,079,273
Balance, End of Year	$931,593	$ 812,179

(The accompanying notes are an integral part of these financial statements.)

PEI AGRICULTURAL RESEARCH INVESTMENT FUND INC.

NOTES TO FINANCIAL STATEMENTS

MARCH 31, 2002

1. Operations

The PEI Agricultural Research Investment Fund Inc. was incorporated on March 31, 1995 under Part 1 of the Companies Act. The main objective of the corporation is to provide funds for agricultural research in the Province.

2. Future Commitments

In addition to the accrued liability, the corporation has approved eight research projects providing for future commitments of:

April 1, 2002 to March 31, 2003	$271,520
April 1, 2003 to March 31, 2004	115,666
April 1, 2004 to March 31, 2005	48,400
	$435,586

3. Share Capital

The corporation has authorized 5,000 common shares with a $1 par value. As at March 31, 2002 there were 100 common shares issued and outstanding. The Government of Prince Edward Island, as represented by the Minister of Agriculture and Forestry, is the sole shareholder.

4. Provincial Administrative Expenses

Costs incurred by the Department of Agriculture and Forestry on behalf of the PEI Agricultural Research Investment Fund Inc. in administrating this fund are not reflected in the financial statements. These costs include salary and related employee benefits, office accommodations, and miscellaneous administrative expenses.

5. Cash and Cash Equivalents

Cash and cash equivalents consist of cash on hand and balances with banks, and short-term investments. Cash and cash equivalents included in the cash flow statement comprise the following balance sheet amounts:

	2002	2001
Cash on hand and balances with bank	$931,593	$ 53,243
Provincial deposit receipt	-	758,936
	$931,593	$812,179